EXPRESS MAIL # EF281842605US

CLAIMS

1. A process for removing at least one MTBE molecule from a solution, which comprises the steps of:

exposing said solution to an inert material adapted to remove a portion of the MTBE therefrom wherein said inert material includes a molecularly imprinted polymer, said molecularly imprinted polymer having at least one site imprinted thereon;

wherein the step of exposing includes the step of contacting said solution with said inert material, said at least one site imprinted on the surface thereof of said inert material being adapted to cooperate with said MTBE by extracting said at least one MTBE molecule from said solution.

2. A process for removing at least some MTBE molecules from a solution, which comprises the steps of:

contacting said solution with at least one molecularly imprinted polymer, said molecularly imprinted polymer having at least one site imprinted on the surface thereof that is

adapted to cooperate with said MTBE by extracting at least one MTBE molecule from said solution.

3. A process for removing at least one MTBE molecule from a solution, which comprises the steps of:

contacting said solution with at least one molecularly imprinted polymer, said molecularly imprinted polymer having at least one site imprinted on the surface thereof that is adapted to cooperate with at least a portion of a MTBE molecule.

4. The process of claim 3 wherein the step of contacting said solution includes contacting said solution with at least one molecularly imprinted polymer, said molecularly imprinted polymer having at least one site imprinted on the surface thereof that is adapted to cooperate with at least a portion of said MTBE molecule by extracting said MTBE molecule from said solution.

5. A process for removing at least one MTBE molecule from a solution, which comprises the steps of:

exposing said solution to at least one molecularly imprinted polymer, said molecularly imprinted polymer having at least one site on the surface thereof that is adapted to receive at least a portion of an MTBE molecule.

6. The process of claim 5 wherein the step of exposing includes exposing said solution to said molecularly imprinted polymer wherein said molecularly imprinted polymer includes means for retaining said MTBE molecule in proximity to said at least one site.

7. The process of claim 6 wherein said means for retaining includes non-covalent bonding.

8. The process of claim 6 wherein said means for retaining includes hydrogen bonding.

9. The process of claim 5 including the step of forming a plurality of molecularly imprinted polymer beads from said

at least one molecularly imprinted polymer prior to the step of exposing said aqueous solution thereto.

10. The process of claim 9 wherein the step of forming includes grinding said at least one molecularly imprinted polymer.

11. The process of claim 9 wherein the step of forming includes pulverizing said at least one molecularly imprinted polymer.

12. The process of claim 9 wherein the step of forming includes fracturing said at least one molecularly imprinted polymer.

13. The process of claim 9 including the step of washing said plurality of molecularly imprinted polymer beads after the step of forming said plurality of molecularly imprinted polymer beads and prior to the step of exposing said solution thereto.

14. The process of claim 13 wherein the step of washing includes exposing said plurality of molecularly imprinted polymer beads to a cleaning solution.

15. The process of claim 14 wherein the step of washing includes exposing said plurality of molecularly imprinted polymer beads to a cleaning solution that contains a solvent.

16. The process of claim 14 wherein the step of washing includes exposing said plurality of molecularly imprinted polymer beads to a cleaning solution that contains an organic solvent.

17. The process of claim 9 including the step of removing at least a portion of MTBE molecules that were used to imprint said at least one molecularly imprinted polymer from the surface of said plurality of molecularly imprinted polymer beads after the step of forming said plurality of molecularly imprinted polymer beads and prior to the step of exposing said solution thereto.

18. The process of claim 13 including the step of drying said plurality of molecularly imprinted polymer beads after the step of washing said molecularly imprinted polymer beads and prior to the step of exposing said solution thereto.

19. The process of claim 13 including the step of reusing said plurality of molecularly imprinted polymer beads after the step of exposing said solution thereto.

20. The process of claim 19 wherein the step of reusing includes exposing a second solution to said molecularly imprinted polymer beads.

21. The process of claim 19 including the step of washing said molecularly imprinted beads after the step of exposing said solution thereto and before the step of exposing said second solution thereto.

22. The process of claim 9 including the step of exposing said plurality of molecularly imprinted beads to said solution.

23. The process of claim 5 including the step of imprinting said at least one site to correspond with at least a portion of the molecular shape of a MTBE molecule.

24. The process of claim 9 including the step of coating an inside surface of a conduit with said plurality of molecularly imprinted polymer beads prior to the step of exposing said solution thereto.

25. The process of claim 24 wherein the step of step of exposing said solution thereto includes the step of pumping said solution into said conduit.

26. A process for making a molecularly imprinted polymer adapted to receive a MTBE molecule, which comprises:

imprinting a molecular polymer to correspond with at least a portion of the molecular shape of an MTBE molecule.

27. A product adapted for removing at least one MTBE molecule from a solution, comprising:

(a) a plurality of molecularly imprinted polymer beads; and

(b) a plurality of imprints disposed on a surface of at least some of said molecularly imprinted polymer beads that correspond with at least a portion of the molecular shape of a MTBE molecule.

28. The product of claim 27 including a conduit and wherein said plurality of molecularly imprinted polymer beads are disposed on a surface of said conduit.